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PRELIMINARY REPORT ON THE 1959 DOUGLAS-FIR BEETLE TREND
ON PORTIONS OF THE SISKIYOU, UMPQUA, AND ROGUE RIVER NATIONAL FORESTS

By

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BACKGROUND

The current Douglas-fir beetle epidemic on portions of the Siskiyou, Umpqua, and Rogue River National Forests resulted from extensive blow-down in these areas during the winter of 1955-1956. This newly fallen green timber presented optimum breeding conditions for beetle populations during the spring of 1956. These broods emerged from the down trees during the spring of 1957 and attacked nearby green standing timber. Aerial surveys during the early summer of 1957 failed to detect any tree killing by the beetle because tree fading was not evident until late summer of that year; consequently, the infestation remained unnoted until early 1958, when it was observed and reported by various foresters in the affected areas.

An evaluation survey was made in the fall of 1958 at which time it was found that tree killing in 1957 and 1958 approximated a 1:1 relationship. At the same time brood conditions indicated a marked downward trend for 1959. A re-evaluation was made in June 1959 to obtain additional information for management.

PURPOSE

The purpose of this report is to present a preliminary analysis of the data collected during the 1959 survey. A comprehensive report covering all developments through the fall of 1959 will be issued later.

METHODS

Sample strips, one chain wide and of variable lengths, were cruised in representative beetle infestations. All recent dead and currently infested Douglas-firs were recorded. For practical purposes, the recent dead comprised the trees killed in 1957 and 1958, and the currently infested were the ones attacked in 1959. In this report only the 1958 and 1959 kills are compared.

The tree counts were supplemented by felling and examining a number of beetle-killed trees to determine the degree of brood production.

RESULTS

Broods in the felled trees were sparse and generally unsuccessful. Killing was due more to *Ceratostomella* fungus accompanying the beetles than to development of the beetle brood. In the past, in southern Oregon, attacks of this kind have been associated with rapidly declining infestations.

From tables 1 and 2, it can be seen that the predicted downward trend of infestation is holding true.

Although the field tabulations of the survey findings indicated a marked difference in number of trees killed in 1958 and 1959, the data were subjected to statistical analysis. From this analysis, it can be seen that the sample value of "t", in both cases, is statistically significant; thereby, substantiating the downward trend of Douglas-fir beetle populations within the areas sampled.

These preliminary findings are expected to be borne out when all the data for the season are in; however, the figures in this report should not be interpreted as final for two reasons: First, at the time of the survey (June), not all attacks for the current season had been made; secondly, recent attacks are difficult to determine, particularly in green timber. On past experience, the late season attacks are expected to be few.

COMMENT

At the present time, the outbreak is being controlled naturally; no artificial control is needed.

Salvage at this stage will utilize dead wood volume that otherwise would deteriorate and be lost, but will have no appreciable control effects.

By fall of this year, a very large part of the total kill during the outbreak will be plainly evident, so that the total salvage job can be confidently assessed.

SUMMARY

Douglas-fir beetle evaluation surveys were made in infestations in south-west Oregon during September 1958 and June 1959 to determine the population trend of the beetle. Field records showed a marked decline in trees killed and subsequent analysis indicated a statistically significant downward trend of beetle populations. It is emphasized that this year's attacks are not over, but any subsequent damage for the remainder of the year should be insignificant.

Table 1.--Comparison of 1958-killed trees with 1959 spring-killed trees on portions of the Siskiyou and Rogue River National Forests

Location	Number of trees	
	1958 kill	1959 kill
Yeager Creek T40S, R6W, Sec. 7	19	3
Greyback Creek T40S, R6W Sec. 12	11	3
Caves Creek T40S, R6W, Sec. 9	14	8
Upper Greyback Creek T40S, R5W, Sec. 1	12	4
" " "	0	0
Oregon Caves National Monument T40S, R6W, Sec. 10	10	2
Oregon Caves Trail T40S, R6W, Sec. 15	2	1
Lake Creek T40S, R6W, Sec. 16	5	2
Steves Fork T41S, R5W, Sec. 5	44	4

$$\bar{x} = 13.0$$

$$\bar{y} = 3.0$$

$$S\bar{x} = \pm 4.07$$

$$t = 2.46 \text{ with } 8 \text{ d.f.}^*$$

* Significant at the 95 percent level.

Table 2.--Comparison of 1958 killed trees with 1959 spring-killed trees on portions of the Umpqua National Forest and adjacent forest lands

Location	Number of trees	
	1958 kill	1959 kill
Black Canyon Cr.		
T30S, R1E, Sec. 33/34	58	13
" " "	7	2
Joe Hall Creek		
T31S, R1W, Sec. 18	67	1
Drew Creek		
T32S, R2W, Sec. 9/10	37	4
" " Sec. 5	25	3
Green Butte		
T31S, R2W, Sec. 19	36	9
Beaver Creek		
T31S, R1W, Sec. 9	16	7
Russel Creek		
T31S, R6W, Sec. 24	16	1
Grave Creek		
T34S, R5W, Sec. 1	25	3

$$\bar{x} = 31.9$$

$$\bar{x} = 4.8$$

$$S_{\bar{x}} = \pm 6.02$$

$$t = 4.69 \text{ with } 8 \text{ d.f.}^{**}$$

** Significant at the 99 percent level.